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JAPANESE TRADE STUDIES

Special Industry Analysis
No. 11

MENTHOL

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Foreign Economic Administration
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FOREWORD

This is one of a series of Special Industry Analyses discussing from a commodity or individual industry viewpoint the outstanding items entering into the trade of Japan proper with its Empire and with foreign countries. These analyses are a part of a larger project which includes compilations (annotated) of the imports and exports of Japan proper by sources and destinations; surveys of certain of the colonial areas, emphasizing their Empire and foreign trade and post-war problems relating thereto; an over-all study of the trade of Japan proper; and a survey of Japan's shipbuilding industry and shipping services and requirements in the pre-war period. In all of the studies Manchuria has been included as an Empire area owing to the political, economic, and military dominance of Japan in that area, especially during the last decade.

Most of the data in these analyses were taken from official and semiofficial Japanese sources. Not only have errors and inconsistencies frequently been detected within individual volumes, but many data from different sources supposedly reporting on the same subject are irreconcilable. It is very likely that large shipments of goods reportedly moving to Kwantung from Japan have been in large part merely transshipments destined for Manchuria. In addition, the data probably exclude large shipments of commodities made to and from Empire areas for military purposes.

The present report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration by members of the staff of the United States Tariff Commission. Owing to the desire of the Foreign Economic Administration to obtain this material as promptly as possible, the reports were not reviewed by the Tariff Commission. All statements of fact or opinion in these reports are attributable to the individual staff members who prepared them. The reports were originally intended for confidential use of Government agencies, but are now being made public with the consent of the Foreign Economic Administration.

MENTHOL

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General

Until 1940, Japan was the world's principal source of natural menthol.¹ Exports of menthol crystal in 1933-37 average annually about 700,000 pounds and were valued at 5.3 million yen.² By 1940, however, China had increased its production to the point where it was a formidable competitor of Japan.³ Since the outbreak of the war with Japan in 1941, Brazil has become the world's largest producer of natural menthol; the price of menthol from Brazil is, however, many times higher than normal pre-war levels for this product.

In recent pre-war years the United States produced annually around 100,000 pounds of synthetic menthol. Most of this was made from imported citronella oils. A satisfactory process has been developed recently for production of synthetic menthol using domestically produced meta cresol as a raw material. Synthetic-menthol production in the United States may soon be able to supply all domestic requirements for menthol, and during normal times, will undoubtedly offer considerable competition to the natural menthol.

Description and uses.

Menthol occurs as colorless crystals or fused masses, and is also known as peppermint camphor. It is a secondary alcohol that can be obtained from the oils of Mentha arvensis var. piperrascens, commonly known as Japanese peppermint; Mentha arvensis var. glabrata, commonly known as Chinese peppermint; Mentha piperita, the common United States peppermint; and others of Mentha. Most of the natural product is ordinarily produced from high menthol-yielding Japanese peppermint oils, either by cooling the oil until the menthol crystallizes out or by fractional distillation. Menthol has a cooling sensation and a peppermint-like odor or taste. There are several synthetic menthols that can be manufactured either by a partial or complete synthesis, depending upon the raw materials used. The two synthetic menthols now recognized as official in the United States Pharmacopoeia are laevorotatory and racemic menthol.

Menthol is used chiefly in pharmaceuticals and medicines, dental preparations, tobaccos, liqueurs, confectionery and other food products.

Production, imports, and exports.

Production of natural menthol in Japan from 1927 to 1938 is believed to have averaged slightly less than 670,000 pounds annually.

During this period production probably increased about 30 percent, so that it was somewhat higher than the average in recent years. No imports of menthol into Japan are reported. Exports (see table) are believed to have been only slightly less than production, as probably only small amounts were consumed within Japan. In most years, the United States

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1/ Before the war Japan also exported (in addition to menthol crystal) approximately 200,000 doz. "menthol cones" annually, valued at about 11,000 yen per annum. Sent to Asiatic areas, these cones, which are a small cone-shaped solid, were carried in the pockets of individuals for the menthol aroma they produced. This trade will likely continue after the war.

2/ Data covering the production of China are not available. In 1940 the United States imported from China 322,589 pounds of natural menthol, or slightly less than 80 percent of the total United States imports.

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Menthol crystal: Exports (domestic produce) from Japan,
by principal markets, 1928-39.

Market	Average 1928-37	Average 1938-37	1938	1939
	Quantity: (pounds)	Value: (1,000 yen)	Quantity: (pounds)	Value: (1,000 yen)
Empire Areas: ^{1/}				
Manchuria -----	2/	2/	397:	3:
Kwantung -----	265:	1:	1,058:	8:
Total -----	2/	2/	1,455:	11:
Other:				
United States -----	263,231:	1,976:	388,101:	2,892:
British India -----	46,185:	342:	58,334:	469:
France -----	83,070:	647:	117,320:	852:
Germany -----	23,016:	170:	27,646:	204:
Straits Settlements:	12,169:	78:	34,127:	246:
Grest Britain -----	53,440:	339:	15,609:	114:
All other -----	41,270:	293:	64,449:	481:
Total "other" -----	522,361:	3,845:	705,566:	5,258:
Total, all areas ^{1/} :	2/	2/	707,021:	5,269:

^{1/} Imports of menthol crystal, if any, into Korea and Formosa are not available as menthol crystal is not separately reported in their official trade data.

^{2/} Not available.

Source: Annual and monthly returns of the foreign trade of Japan. Tables of the trade and shipping of Chosen (Korea). Annual returns of the Trade of Taiwan (Formosa).